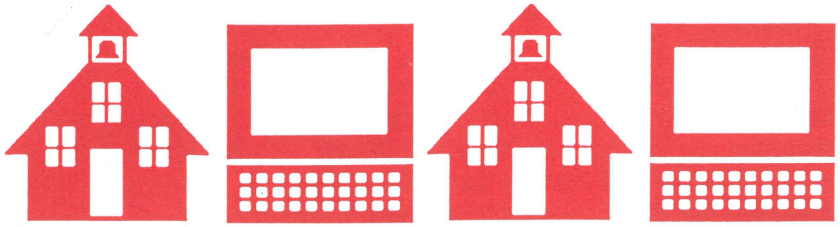

# Bringing the Computer into Your Classroom

*A how-to guide for teachers who love to teach.*

Tom Snyder Productions®
EDUCATIONAL SOFTWARE

SOCIAL STUDIES • MATH • HISTORY • ENGLISH • SCIENCE

# About the Authors

The authors of this brochure, David Dockterman and Tom Snyder, are teachers. David received his B.A. in History and teaching certification at Yale University. He taught high school social studies and history for several years in Connecticut before entering the doctoral program at the Harvard Graduate School of Education. Currently, David is Vice-President of School Products at Tom Snyder Productions and the author of Decisions, Decisions™. He remains active in schools, working with teachers and serving on the Computers for Kids Board of Cambridge, MA.

Tom, the Chairman of Tom Snyder Productions, received a B.A. in French from Swarthmore College and his M.A. in Education from Lesley College. He taught science and music at the Shady Hill School in Cambridge, MA for ten years. As the author of best-selling educational software such as the Search Series™, Snooper Troops®, Agent U.S.A.™ and In Search of the Most Amazing Thing™, Tom is one of the most respected software designers in the industry.

This brochure is produced by Tom Snyder Productions, Inc., a leading developer of educational software in the United States. We specialize in producing high-quality products that help teachers do what they do best - teach. Simulations such as **The Other Side™**, **Decisions, Decisions™**, **GeoWorld™**, and **Our Town Meeting™** are designed specifically for classroom use. These programs stand out because they teach critical thinking skills in the context of the curriculum. Thousands of teachers throughout the world use our programs to build educational skills, foster the development of social skills, and encourage cooperation among students.

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*Software for teachers who love to teach.*

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*This book is about using computers in the traditional school classroom. It is written for teachers by teachers. Our goal is to provide you with a foundation which will enable you to consider whether or not computers have a place in your classroom. And if they do, how to go about using them. We hope that we can be of some help.*

# I. Computers in the Classroom: *Do they belong?*

This is a difficult question, and one that only you can answer. Although computers have already been integrated into several school settings, they may be brand new to your classroom. You may have heard some great stories about what computers have accomplished in some classes; you may also have heard some severe criticisms. The situation can be very confusing.

## Film and Computers: A Helpful Analogy.

To help you gain some perspective on the situation, we have a suggestion. Pretend it's 1920 and ask yourself the question, "Should I be using movie projectors in my classroom?" Knowing what you know now about educational film, you might not find this question particularly difficult or important. In 1920, however, leaders in film technology were claiming that this medium would radically change the schools. Thomas Edison predicted that children would be beating down the doors to get *into* the classroom. Such was the expectation for movies in education. Sound familiar?

Computers and films were not originally designed as teachers' tools, but both have potentially valuable roles in education. A good movie or a good piece of computer software is like a work of art that can draw students into new worlds, sending them on a field trip without ever leaving the classroom. The ultimate value of educational films and software, however, depends greatly on how they are used. In the 1920's, film advocates believed that the teacher needed only to turn out the lights, turn on the projector and children would be transfixed. Teachers quickly found, however, that when they turned out the lights, children did not always focus on the movie. Discipline became a major problem. The materials simply did not work by themselves. They needed, and continue to need, a good teacher.

As a teacher, you play a major role in the effectiveness of software. This is why we at TSP encourage you to trust your instincts and judgement in deciding how to use computers in your classroom. We believe that computers should be "tools for teachers." Software should be designed to fit easily into the existing curriculum and classroom structure.

## What can I do with computers that I couldn't do before?

Computers are very powerful machines. They can store, retrieve, and manage large amounts of information quickly. They can also illustrate how things work and how pieces fit together in an interactive, animated style. Sometimes these capabilities open new doors, allowing you to undertake new activities you never before considered. In other situations, the computer's power enables you to enhance what you already do.

In general, educational software takes advantage of the computer's ability in five different ways:

### • Simulations.

Science and social studies, in particular, have a tradition of using simulations to bring difficult concepts to life. Students take on new roles – they can become crew members of a ship sailing for the New World, geologists seeking resources beneath the earth's surface, or senators trying to pass a bill. They become actively involved in collecting and interpreting data, and making group decisions. However, traditional classroom simulations can often be limited by the number of elements needed to reproduce the desired situation. In a simulation of the United States Senate, for example, it's difficult to include all the pressures of constituencies, lobbyists, PACs, and party leaders, while playing out the mechanics of passing a bill. It's a great deal of information for one teacher to keep track of. The computer, with appropriate software, can help you expand the limits of the simulation by managing many of the elements *for* you. Good software simulations engage students in collecting and interpreting data, debating, and making collaborative decisions – the critical thinking skills which are central to the study of any discipline.

### • Drill and Practice.

Worksheets and flash cards have long been used to reinforce factual information. These exercises often become tedious for teachers. Drill and practice software relieves some of the drudgery, presenting students with questions, immediately evaluating their responses, and reporting their results. This type of software can help students memorize facts and develop specific skills, such as the multiplication tables.



### • Tutorials.

Students learn material at different paces: some may have difficulty grasping a particular body of information, while others may be ready to move ahead. It can be difficult to accommodate these individual differences. Some software can help by leading students through material, based on their individual levels and interests. These tutorials are a form of interactive self-teaching.

### • Databases.

Databases are like having your own index cards stored on a disk with the advantage of making it easier to organize and find information. Students can use databases to look at, explore, and manipulate historical, scientific, or even literary data in a myriad of ways. For instance, students might examine economic trends, resource distribution, or vocabulary usage. The use of databases can provide students with powerful new skills for managing information and research.

### • Programming Languages.

The computer can also become its own erector set. With the appropriate software and training, students can write their own programs for a variety of applications. They can create models of simple worlds, write programs that analyze data, or devise their own drill and practice exercises. These programming languages introduce students to a particular type of structured thinking.

# II. Computers in the Classroom: *Where do I begin?*

In order to consider using computers with your class, you must begin by thinking about what you *want* and what you *can* do. Each one of you is in a unique situation with different computer resources, teaching styles, and curricular goals. No doubt, much of your thinking about using computers will be structured by the resources available to you. In the passages below, look for the resource distribution that fits your particular situation.

## Using computers in a computer lab.

Lab settings with large numbers of computers ensure that each student has access to a machine. Labs are physically designed for students to work individually or in pairs at a computer. This structure does not lend itself to discussions and lectures, but it can be very useful for other instructional techniques. The following are some alternative ways for using a lab:

### • Drill and practice and homework.

The lab setting can provide activities for different students' needs and interests. You can organize self-study or homework projects to be done in the lab during class or study periods. Students can use drill and practice programs to help them memorize facts and prepare for exams. However, managing a variety of individual projects at the same time can be a major task for the teacher. It is also important to consider whether or not the computer provides advantages over traditional methods of drill and practice.

### • Research.

Computers provide new ways to search for and examine information. Software is now available, for instance, that allows students to perform experiments that they would normally do in a science lab. They can measure temperature, analyze light waves, mix chemicals, or even dissect animals using probes and simulations. Using the computer in this way is sometimes cheaper and less dangerous than traditional methods. Be aware, however, that simulated dissections are far from the real thing.



Science is not the only area where the computer can be valuable as a research tool. Students can sift through databases or perform statistical analyses as part of research projects in social studies or language arts. In this way, the lab setting can be a valuable extension of the school library.

Software databases on a variety of topics are currently available. Students, for example can sift through **GeoWorld**'s real data on the distribution of the world's major industrial resources. Through their research, they will discover the relationships between different resources and industrial development. In addition, students can tap into on-line databases, such as **Compu-Serve**, **The Source**, and **Dow Jones**. These information utility services provide up-to-date information from all over the world.

Students can also create their own databases by using database management programs like **PFS®** and **AppleWorks™**. Students can become survey takers collecting information on their own community. In Weston, Massachusetts, students put together their own database on the industrial history of the Boston area and its ecological impact on the Charles River. It may take some time to learn how to use available databases, but most worthwhile projects demand an initial investment of time and effort.

### • Writing.

One of the most powerful uses of computers is as a word processor. A computer lab would be an ideal setting for lessons in keyboarding and writing. The ability to make easy edits and quickly manipulate text turns word processing into a very important and valuable skill for students to acquire. Language arts is the obvious discipline for this use of the computer, but writing should be supported across the curriculum. All classes could take advantage of a writing lab in a school.

Such a lab would also serve several extra-curricular activities. The school newspaper, club newsletters, and student plays can all be developed, edited, and produced in this lab.

## Using one or two computers in a classroom.

Many teachers have access to computers that they share with others. Sometimes the computer is on a cart and you can wheel it right into your classroom. Unfortunately, most educational

software is designed for one or two users at a time and is not conducive to the classroom setting of one teacher with 20-30 students. This situation creates a management problem. If you send two students to the computer, what do you do with the other 25? Finding a way to rotate an entire class through a computer program, while keeping everyone busy, is a significant administrative task. You must consider if it's worth it. You want the technology to work for you, not the other way around.

The popular assumption that computers are best used by only one or two students at a time should be questioned. In many ways, the computer is a public vehicle. After all, it displays information on what is essentially a television set. Our focus at Tom Snyder Productions is creating software that involves an entire class using only one computer. For example, **Decisions, Decisions™** and **Our Town Meeting™** engage the whole class in curricular-based simulations.

These are some management techniques for taking advantage of one or two computers in your classroom using software that is designed for only one or two students at a time:

### • Stations.

Divide your classroom into several activity stations which support the current subject area. You can set up one or two stations with computers and software. Other stations could have activities involving maps, charts, books, and worksheets. Rotate individuals or small groups of students through the stations until they have all completed each activity.

### • Projects.

Use the computer as one of the resources necessary to complete independent projects. Create a schedule for students to sign up for computer time. When the computer is not available, students can use library books and other research materials.

### • Demonstrations.

Hook the computer up to a bigger screen or to additional monitors (cables are available that split the video output), so you can involve a larger audience. With this arrangement, anything you can do alone at the computer, you can do with the whole class. You now have a type of interactive film or slide. The computer, especially with its graphics capabilities, can illuminate difficult-to-understand information in powerful ways. By using software



with graphing capabilities, you can show your students the results of changing specific variables without having to redraw the graphs. This is an excellent way to demonstrate "what if" scenarios.

Below are some suggestions for using software designed for groups:

### • Small Groups.

Some software, while designed for small groups, is not structured to handle the numbers you have in your classroom. The program may accommodate eight players, while you have 20 or more in your class. With two computers, you can easily double the number of students involved in the activity. In addition, you can have students take on related non-computer roles, such as note-takers, or reporters.

### • Entire class.

The TSP vision is to create software which can engage an entire class with just one computer. In **Our Town Meeting™**, the class is divided into small groups which rotate through turns at the computer. While one group is at the computer, the other groups are examining new information and discussing new options. The program will send one group of students back to their seats and call for the next group. This enables you to move around, assisting students in interpreting data and making decisions. It is helpful to designate classroom areas where the groups can meet. Some software contains timers which you may be able to reset or turn off to match the specific needs and abilities of your class.

In other TSP programs, the class works as a whole. The teacher stands at the front of the room, and there's no need to rearrange the classroom. For example, the **Decisions, Decisions™** series is a group of programs designed to assist the teacher in involving the entire class in stimulating discussions of historical and contemporary topics, such as immigration, foreign policy, and colonization. The software serves as a spark, giving students new situations to analyze and decisions to make. It records and manages all the data, enabling you, the teacher, to lead discussions and help students make decisions.

The following is a teacher's account of using one of the **Decisions, Decisions™** titles, *Foreign Policy*, in a seventh grade social studies classroom in Boston:

*I wanted my social studies class to relate the history of U.S. foreign policy to currents events in the Philippines and Haiti. How should the U.S. interact with other countries in the world? Usually, I use the approach of presenting students with the question, "What would you do if...". They make decisions and I play devil's advocate to help them understand the consequences and reasons for different actions. This time I decided to use a software program called Foreign Policy: The Burdens of World Power.*

*I wheeled the computer from the social studies office into my classroom and set it next to my desk. I planned to lead my class through the simulation by pushing the buttons and reading what appeared on the screen. I handed out a Student Reference Book to each student and loaded the software into the computer. While students followed in their books, I read the opening situation. In this simulation, students assume the role of leader of one of the world's super powers. An ally, a king, asks them to suppress a rebellion in his nation. The king says a rival super power will take over his strategically important nation if he can't stay in power.*

*The computer first asked the class to prioritize the four goals it presented to us: A) Get re-elected; B) Protect our citizens abroad; C) Keep the nation in question as an ally; and D) Set up a popular leader in that country. I led the discussion and, after much debate, the class voted C as top priority. Then the computer directed us to select our first action from these choices: A) Keep a low profile–no more aid; B) Increase aid to King; C) Pressure King to hold elections. We were off and running.*

*Each action had consequences which the students had to confront, and each new situation posed new choices. To aid students in discussing their options, the computer displayed four advisors who referred students to their reference books. There students found historical references that applied to their current situation. One student read about Teddy Roosevelt's imperialist actions while another read about cautious detente. Each reference led students in a different direction and supplied me with more substance for the discussion. Since many of the references were about incidents we had already studied, I had the opportunity to reinforce them and make the connections stronger.*

*The experience was invigorating. I kept my usual position as classroom leader, but this software made my job easier. It managed the content, freeing me to concentrate on the art of leading a good classroom discussion.*

## Using your own computer.

If you have constant access to a computer, you can do all that we have described above, plus more. If you are willing to invest the time, you might be able to use it to help you with the day-to-day management tasks of grading, attendance, and report-writing. Your school might already own some management software. Check with the math department and the main office to see what they're using. You need neither the power nor the complexity of elaborate business software, but some simple programs might be useful. If you know how to program you can create your own grading program.

A great deal can be done with just a word-processor – it can be used to create worksheets, write lesson plans, and make outlines. Any of these uses requires a certain amount of start-up time to find the software you want and to figure out how to use it. In the long run, you may find yourself saving a lot of time depending on how much access you have to a computer.

# III. Computers in the Classroom:
## *Finding what's right for you.*

What do you need to know before you begin integrating the technology into your classroom? You *need* to know as much about computers as you need to know about film if you're going to show movies in your classroom. You don't need to be able to make a film in order to use one, and in the same way you don't need to know how to *program* in order to use a computer. It is useful, however, to know how the equipment works, e.g., how to boot a disk.

It is also valuable to "understand" the technology, to know its capabilities and limitations. This can be difficult because the technology is ever changing. We are still experimenting with what can be done with computers, and everyday new and unexpected applications are discovered. Nonetheless, the more you know, the better you'll be able to evaluate software, and the sooner you'll become comfortable with the machine.

### How to find good software.

Finding good educational software is like finding a good educational film; somebody tells you about it or you preview something worthwhile. In addition, definitions of "good" and "bad" tend to be personal and relative. Much depends on how the software is used. In general though, there's probably more "bad" software than "good", so you have a lot to weed through. Few teachers have the time to examine an untold number of computer programs to find one they can use. Here are some helpful tips for finding good software:

- Whenever possible, order for preview. Test out the product before you buy it. Most companies offer a 30-day preview period.

- Use software reviews to help you narrow down the field. See pages 15-16 for a list of journals and review catalogs.

- Consider the source of the reviews. Articles in computer magazines may not be written by content area teachers, and reviews in discipline journals may not be done by teachers with much computer experience.



- Talk to your colleagues. Find out which programs they like to use.

- Remember that you are the best judge of what will work in your classroom.

### How to evaluate software.

The best way to evaluate a piece of software is to try it yourself. It's helpful to go through the program as a student who has difficulty following directions. Make a lot of mistakes to see how the program responds. If you find it boring or tedious, chances are your students will too. Look for programs that you find interesting and fun. Your students will probably like what you like, and your enthusiasm for a product will influence your class.

Finding the time to try out software can be difficult. Another problem is evaluating software designed for group use by yourself. A program built to involve many students at once can be very confusing for a single player. How can you tell if it is any good? Ideally, you should gather a group of friends or colleagues together to try it out. This method, however, is not always practical. One possible solution is to give the software to some students to play. Ask for volunteers after school, during lunch, or during a study hall. Don't ask them to evaluate, just let them explore. The results of their efforts will often give you a good sense about a program.

Despite individual differences in classroom settings and teacher goals, there are a few general questions you should ask when looking at software:

- Does the software suit my course content ?

- Does the software fit the resources I have available, e.g., lab with many computers, one computer for whole class, etc.?

- Does the software fit into the school schedule? Can I save the program if it takes longer than one class period to play?

- Does the software suit my teaching style?

# IV. Computers in the Classroom: *Finding the resources.*

## Time and Space.

When you bring home a pile of papers to grade every night, advise the student council, and make yourself available to students, it's extremely difficult to find time to sleep, let alone take on additional burdens. We don't know where the time comes from, but when you hit one of those slow points, take advantage of it. You'll find that after the initial investment, it will get easier. Team up with other teachers to share your responsibilities. Many teacher organizations, like the National Council for the Social Studies, have special interest groups devoted solely to computer use. Contact local, state, or national chapters for more information.

If your conditions are as cramped as some we've seen, space could be a problem. Keeping the computer on a cart allows you to move the machine out of the way when not in use. Treat it like a film projector.

## Money.

The following are some suggestions for obtaining resources to purchase the hardware and software you want:

- **Local school system.**

If your school is making an effort to bring computers into the classrooms, make sure your discipline is not overlooked. Plan ahead to get what you want. Discretionary funds are places to look to fulfill your immediate needs.

- **Parent groups.**

Some schools have received funding from parent groups who are interested in ensuring that their children are exposed to computers in school. Check with the P.T.A. or other local interest groups.

- **High tech companies.**

Computer companies have donated equipment to some schools as part of public relations or research efforts. Contact one of these manufacturers with a proposal.



- **Government grants.**

To obtain information on grants, check for materials in your local library or contact local, state, and national agencies.

- **Universities.**

If you are near a major university, you might be able to become involved with a research project or outreach program that includes some equipment for the school.

# V. Computers in the Classroom:
*Resource materials.*

## BOOKS

**Microcomputers and the Social Studies: A Reference Guide** by Joseph A. Braun
New York: Garland Publishing, 1986.
Contains a general overview and history of computers in education, as well as specific information about issues in social education.

**Educating for the Future: Computers and Social Studies** by Susan Friel, Thomas Landenburg and Nancy Roberts
Reading, MA: Addison-Wesley Publishing Company, 1986.
Offers a comprehensive resource section and helpful information about integrating computers into the K-12 social studies curriculum.

**In Search of the Most Amazing Thing** by Tom Snyder and Jane Palmer
Reading, MA: Addison-Wesley Publishing Company, 1986.
Presents a philosophical consideration of how computers can mesh with the realities of the classroom and the social environment of the school.

**Computer Power and Human Reason** by Joseph Weizenbaum
San Francisco: W.H. Freeman and Company, 1976.
One of the best critical considerations of the technology.

## BOOKLETS

**Computing in the Social Studies Classroom** by Allen Glenn and Don Rawitsch, an informative booklet, is available from International Council for Computers in Education, University of Oregon, 1787 Agate St., Eugene, Oregon, 97403-1923, tel: (503) 686-4414.

**Personal Computers and Social Education: A Resource Guide** by Beverly Hunter, a valuable handbook, is available from Apple Education Affairs, 10201 N. Dianza Blvd., Cupertino, CA 95014.



## JOURNALS AND MAGAZINES

**Classroom Computer Learning** (19 Davis Drive, Belmont, CA 94002), contains articles by K-College educators who use computers in their classrooms.

**The Computing Teacher** (University of Oregon, 1787 Agate St., Eugene, OR 97403-1923), contains articles on teaching about computers, teaching using computers, teacher education, and the impact of computers on curricula.

**Electronic Learning** (Scholastic, Inc., 730 Broadway, NY, NY 10003-9538), provides information on incorporating microcomputers into the educational and school administrative systems. It includes helpful articles and reviews across the disciplines.

**Instructor** (545 Fifth Avenue, NY, NY 10017), is designed for K-8 educators, including teachers, administrators and media specialists.

**Social Education** (3501 Newark St, NW., Washington, DC 20016), the official journal of the National Council for the Social Studies, is both a guide and a forum for social studies educators, focusing on trends and ideas.

**Teachers and Computing** (Scholastic, Inc., 730 Broadway, NY, NY 10003- 9538), provides K-8 teachers with practical ways to use computers in their classrooms.

**T.H.E. Journal** (P.O. Box 15126, Santa Ana, CA 92705-0126), is an educational technology forum for administrators.

## SOFTWARE DIRECTORIES

**Educational Preview Guide** (ICCE, University of Oregon, 1787 Agate Street, Eugene, OR 97403-1923) provides lists of microcomputer software for K-12 educators for the purpose of aiding them in locating software to preview.

**TESS: The Educational Software Selector** (EPIE Institute, Teachers College Press, P.O. Box 839, Water Mill, NY 11976), contains information on over 4,200 education software products and 400 suppliers. It is cross-referenced by curriculum area and by hardware system.

# VI. Computers in Classroom: *Software.*

Tom Snyder Productions has focused on developing software for a variety of curricular areas:

## American History

***Decisions, Decisions.*** **Colonization™: Exploring New Worlds** Set in the future, students must make decisions about America's space program because rival nations are establishing bases on nearby planets and moons. Students compare this situation to the Age of Exploration, as they discuss and decide how to invest their nation's resources. Grades 5-12. Published by Tom Snyder Productions, Inc.

***Decisions, Decisions.*** **Foreign Policy™: The Burdens of World Power** In this simulation, students become the leader of one of the world's super powers. An ally seeks their support to suppress a rebellion in a strategically important nation. Guided by examples from U.S. history, students discuss crucial issues in foreign policy. Grades 8-12. Published by Tom Snyder Productions, Inc.

***Decisions, Decisions.*** **Immigration™: Maintaining the Open Door** As President of the United States, students must decide how to respond to an approaching flotilla of uninvited refugees. Students learn about the history of U.S. immigration and immigration policies. Grades 5-12. Published by Tom Snyder Productions, Inc.

***Decisions, Decisions.*** **Revolutionary Wars™: Choosing Sides** The territory is in an uproar. Rebels are calling for a revolution against their home country. Students take the role of a provincial governor caught between divided loyalties. They examine the American Revolution to help them decide which actions to take. Grades 5-12. Published by Tom Snyder Productions, Inc.

***Decisions, Decisions.*** **Urbanization™: The Growth of Cities** The discovery of a new resource has sparked a rush of newcomers into a quiet town for which students are the mayor. They must decide how much their town should participate in this boom. Students learn about the development of cities in U.S. history. Grades 5-12. Published by Tom Snyder Productions, Inc.



**The Ripple that Changed American History™: A Time Line Adventure Game** Students test and expand their historical knowledge. They use the *Encyclopedic Dictionary of American History* (included) to research important issues, people and dates so they can put into chronological perspective major events in U.S. History. Grades 5-12. Published by Tom Snyder Productions, Inc.

## Civics and Government

***Decisions, Decisions.*** **On the Campaign Trail™: Issues and Image in a Presidential Election** As a bold third party candidate for President of the United States, your students address important social, economic and foreign policy issues as they finalize their election platform. Grades 7-12. Published by Tom Snyder Productions, Inc.

***Decisions, Decisions.*** **Television™: A Study of Media Ethics** Students assume the role of sponsor of a controversial, but highly-acclaimed television special. As they make decisions, students discuss the responsibility of media, the power of special interest groups, censorship, and the role of television in society. Grades 5-12. Published by Tom Snyder Productions, Inc.

**Our Town Meeting™: A Lesson in Civic Responsibility** As members of town agencies, students analyze and carry out various civic projects like building a hospital or improving town highways. Students balance what is fiscally responsible with what is popular as they develop a keen community awareness. Grades 5-12. Published by Tom Snyder Productions, Inc.

***Search Series:*** **Community Search™** In this simulation, students become the governing members of an ancient civilization searching for a new homeland. Grades 4-9. Published by McGraw-Hill Book Company.

**The Other Side™** Students assume leadership of two nations struggling towards peace in a world of limited resources. This simulation builds critical thinking skills and encourages discussions of international relations, foreign policy, economics, and other world topics. Grades 5-12. Published by Tom Snyder Productions, Inc.

## Economics

***Decisions, Decisions.*** **The Budget Process™: A Question of Balance**
Students assume the role of a member of the House of Representatives and the author of a federal budget bill. Students experience the workings of Congress and discuss important budgetary issues as they struggle to get their bill passed. Grades 8-12. Published by Tom Snyder Productions, Inc.

**Make Millions™**
Students have a hands-on experience investing in the stock market and running small corporations. Grades 9-12. Published by Mindscape, Inc.

## Geography

**Agent USA™**
Students travel by train across the United States, learning about the major cities. They gain skills in reading maps and schedules. Grades 3-8. Published by Scholastic, Inc.

**National Inspirer™**
This large-group, one-computer U.S. geography game teaches students important state statistics as well as map reading, strategic planning, and social interaction skills. In a competitive format, students discover how vital commodities and resources are distributed throughout the United States. Grades 5-8. Published by Tom Snyder Productions, Inc.

***Search Series:*** **Geography Search™**
In this simulation, students become crew members of sailing ships in search of the New World. They learn to navigate their boats by using the sun, stars, ocean depth, and trade winds. Grades 5-9. Published by McGraw-Hill Book Company.

## Mathematics

**LifeLab™: The Math/Science Exploration Station**
This simulation laboratory, based on John Conway's "Game of Life," allows students to experiment with mathematical rules. Students strengthen their ability to formulate and test scientific and mathematical hypotheses. By George Brackett. Grades 5-12. Published by Tom Snyder Productions, Inc.



**Little Shoppers Kit™**
This elementary math software kit provides everything a teacher needs to set up a classroom "store." The program turns the computer into a helpful cash register to keep track of students' buying and selling as they participate in this fun educational experience. By Phyllis Kalowski and Liz DelaPaolera. Grades K-4. Published by Tom Snyder Productions, Inc.

**McGraw-Hill Mathematics Problem-Solving Courseware™**
This math program uses elaborate, real-life simulations to motivate and actively involve students in the learning process. Each of the four simulations in the grades 5 through 8 series draws the students into an intriguing mystery which unfolds as math problems are solved. Grades 5-8. Published by McGraw-Hill Book Company.

## Science

**GeoWorld™: A Living Database**
This up-to-date database and simulation accurately represents the location and distribution of mineral resources in the world. Students learn about the relationships between minerals and industrial development. They also sharpen their research skills. Grades 5-12. Published by Tom Snyder Productions, Inc.

***Search Series:*** **Energy Search™**
Students are responsible for running an energy factory. They learn about the costs and benefits of using different kinds of power, such as animal versus water power. Grades 4-9. Published by McGraw-Hill Book Company.

## Tools for the Classroom

**TimeLiner™**
This easy to use program allows teachers and students to create their own personal and historical time lines up to 99 pages long with whatever information they want. Use TimeLiner to illustrate patterns in history or merge time lines to gain a new perspective on a sequence of events. Time lines are printed sideways in a large, easy-to-read banner format. Grades K-12. Published by Tom Snyder Productions, Inc.

**Tom Snyder Productions®**
EDUCATIONAL SOFTWARE

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